

What is claimed is:

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1. A screen operating method for a portable radio information terminal apparatus for executing information control of a multilayer structure having a top layer and at least one lower layer on which a plurality of messages terminated at said portable radio information terminal apparatus are placed, said portable radio information terminal apparatus being capable of executing operations including screen displaying on each of the layers, said portable radio information terminal apparatus having an inputting means capable of executing a command inputting operation and an image display device for screen displaying,

wherein screen operation processing with a moving operation from one of the layers to another combined with a screen displaying operation for said another layer is repetitively executable only during a period of time in which a predetermined command input operation is being executed.

2. The screen operating method according to claim 1, wherein said top layer is a main menu displaying layer.

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3. The screen operating method according to claim 1, wherein said stop layer is a standby screen displaying layer.

4. A screen operating method for a portable radio information terminal apparatus for executing information control of a multilayer structure having a top layer and at least one lower layer on which a plurality of messages terminated at said portable radio information terminal apparatus with a radio wave are placed, said portable radio information terminal apparatus being capable of executing operations including screen displaying on each of the layers, said portable radio information terminal apparatus having an inputting means capable of executing a command inputting operation and an image display device for screen displaying,

wherein screen operation processing with a moving operation from one of the layers to another combined with a screen displaying operation for said another layer is repetitively executable only during a period in which a predetermined command input operation is being executed.

5. A portable radio information terminal apparatus for executing information control of a multilayer structure having a top layer and at least one lower layer on which a plurality of messages terminated at said portable radio information terminal apparatus are placed, said top layer thereof being one of a main menu screen displaying layer and a standby screen displaying layer,

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said portable radio information terminal apparatus being capable of executing operations including screen displaying on each of the layers, said portable radio information terminal apparatus having an inputting means capable of executing a command inputting operation and an image display device for screen displaying, said portable radio information terminal apparatus comprising at least:

a command inputting discriminating means for determining whether an input signal supplied from said inputting means is generated by a predetermined command inputting operation;

a movement control means for determining, based on a decision made by said command inputting discriminating means, whether the generated input signal continues and, if said generated input signal is found continuing, activating a layer-to-layer moving means and, if said generated input signal is found stopped, stopping said layer-to-layer moving means; and

said layer-to-layer moving means for causing a layer-to-layer moving operation based on a command issued by said movement control means and executing a screen displaying operation on a destination layer;

wherein, while said generated input signal continues, said layer-to-layer moving operation and said

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a3 } screen display operation on said destination layer are repeated.

6. A portable radio information terminal apparatus for executing information control of a multilayer structure having a top layer and at least one lower layer on which a plurality of messages terminated at said portable radio information terminal apparatus with a radio wave are placed, said top layer thereof being one of a main menu screen displaying layer and a standby screen displaying layer, said portable radio information terminal apparatus being capable of executing operations including screen displaying on each of the layers, said portable radio information terminal apparatus having an inputting means capable of executing a command inputting operation and an image display device for screen displaying, said portable radio information terminal apparatus comprising at least:

a command inputting discriminating means for determining whether an input signal supplied from said inputting means is generated by a predetermined command inputting operation;

a movement control means for determining, based on a decision made by said command inputting discriminating means, whether the generated input signal continues and,

if said generated input signal is found continuing,
activating a layer-to-layer moving means and, if said
generated input signal is found stopped, stopping said
layer-to-layer moving means; and

said layer-to-layer moving means for causing a
layer-to-layer moving operation based on a command issued
by said movement control means and executing a screen
displaying operation on a destination layer;

wherein, while said generated input signal
continues, said layer-to-layer moving operation and said
screen display operation on said destination layer are
repeated.

7. A recording medium that records, as programs
readable and executable by a computer, at least:

a command input discriminating means for
determining whether an input signal generated while a
portable radio information terminal apparatus having an
image display device and an inputting device and
executing information control on a multilayer structure
of which top player is one of a main menu displaying
layer and a standby screen displaying layer is operating
on one layer of said multilayer structure has been
generated by a predetermined command inputting operation;

a movement control means for determining, based on

a decision made by said command input discriminating means, whether the generated input signal continues and, if said generated input signal is found continuing, activating a layer-to-layer moving means and, if said generated input signal is found stopped, stopping said layer-to-layer moving means; and

said layer-to-layer moving means for causing a layer-to-layer moving operation based on a command issued by said movement control means and executing a screen displaying operation on a destination layer.

8. A microcomputer apparatus comprising:

a central processing unit;

a recording means for recording a procedure
readable and executable by said central processing unit
as a program: and

a communication means connected at least to said central processing unit and said recording means, having a data transmitting means connectable from the outside of said microcomputer apparatus, and providing a capability of transmitting a signal resulted from processing of said central processing unit to an external device through one of a cable and a radio wave;

wherein said recording means records said procedure
including at least

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a command input discriminating means for determining whether an input signal generated while a portable radio information terminal apparatus having an image display device and an inputting device and executing information control on a multilayer structure of which top player is one of a main menu displaying layer and a standby screen displaying layer is operating on one layer of said multilayer structure has been generated by a predetermined command inputting operation;

a movement control means for determining, based on a decision made by said command input discriminating means, whether the generated input signal continues and, if said generated input signal is found continuing, activating a layer-to-layer moving means and, if said generated input signal is found stopped, stopping said layer-to-layer moving means; and

said layer-to-layer moving means for causing a layer-to-layer moving operation based on a command issued by said movement control means and executing a screen displaying operation on a destination layer.

9. A screen operating method for a portable radio information terminal apparatus for executing information control of a multilayer structure having a top layer and at least one lower layer on which a plurality of messages

terminated at said portable radio information terminal apparatus are placed, said top layer thereof being one of a main menu screen displaying layer and a standby screen displaying layer, said portable radio information terminal apparatus being capable of executing operations including screen displaying on each of the layers, said portable radio information terminal apparatus having an inputting means capable of executing a command inputting operation and an image display device for screen displaying,

wherein, if a continuation time of said command inputting operation is in excess of a predetermined time, said screen displaying moves to said top layer of said multilayer structure.

10. A portable radio information terminal apparatus for executing information control of a multilayer structure having a top layer and at least one lower layer on which a plurality of messages terminated at said portable radio information terminal apparatus are placed, said top layer thereof being one of a main menu screen displaying layer and a standby screen displaying layer, said portable radio information terminal apparatus being capable of executing operations including screen displaying on each of the layers, said portable radio

information terminal apparatus having an inputting means capable of executing a command inputting operation and an image display device for screen displaying, said portable radio information terminal apparatus comprising at least:

a command input processing means for determining whether an input signal supplied from said input means has been generated by a predetermined command inputting operation;

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a movement control means for counting, based on a decision made by said command input processing means, a continuation time of the generated input signal and, if the continuation time is found exceeding a predetermined time, instructing an upper-layer moving means to move screen displaying to said top layer and, if the continuation time is found within the predetermined time, instructing said upper-layer moving means to move screen displaying to an adjacent upper layer; and

said upper-layer moving means for executing, based on a command issued by said movement control means, movement to at least one of said top layer and said adjacent upper layer.

11. A recording medium that records, as programs readable and executable by a computer, at least:

a command input processing means for determining

whether an input signal generated while a portable radio information terminal apparatus having an image display device and an inputting device and executing information control on a multilayer structure of which top player is one of a main menu displaying layer and a standby screen displaying layer is operating on one layer of said multilayer structure has been generated by a predetermined command inputting operation;

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readable and executable by said central processing unit as a program: and

a communication means connected at least to said central processing unit and said recording means, having a data transmitting means connectable from the outside of said microcomputer apparatus, and providing a capability of transmitting a signal resulted from processing of said central processing unit to an external device through one of a cable and a radio wave;

wherein said recording means records said procedure including at least:

a command input processing means for determining whether an input signal generated while a portable radio information terminal apparatus having an image display device and an inputting device and executing information control on a multilayer structure of which top player is one of a main menu displaying layer and a standby screen displaying layer is operating on one layer of said multilayer structure has been generated by a predetermined command inputting operation;

a movement control means for counting, based on a decision made by said command input processing means, a continuation time of the generated input signal and, if the continuation time is found exceeding a predetermined

time, instructing an upper-layer moving means to move
screen displaying to said top layer and, if the
continuation time is found within the predetermined time,
instructing said upper-layer moving means to move screen
displaying to an adjacent upper layer; and

said upper-layer moving means for executing, based
on a command issued by said movement control means,
movement to at least one of said top layer and said
adjacent upper layer.

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Add
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